

ABSTRACT OF THE DISCLOSURE

A method for manufacturing a capacitor using a tantalum oxy nitride (TaON) film in a process for a semiconductor device. More particularly, a method for manufacturing a capacitor which reduces a number of steps and thus increases yield by in-situ performing P-doping after forming a MPS (Metastable Poly Silicon) on a lower electrode and forming a nitride film before forming a tantalum oxy nitride film to prevent the concentration of phosphor contained in the lower electrode from being reduced by removing the phosphor on the surface of the lower electrode in a cleaning process between the above two steps, for thereby increasing the capacitance of the capacitor.